

# Annex E

## Integrated Policy Appraisal

	Integrated Policy Appraisal	Qualitative assessment	Quantitative measure(s)
E C O N O M I C	<p><b>Public accounts and public service</b></p> <ul style="list-style-type: none"> <li>● Will the policy or project involve cost to exchequer funds?</li> <li>● Will it result in receipts or savings to the Exchequer?</li> <li>● Will it impose administrative or other burdens on public service providers, e.g. frontline staff in health, education, local government or criminal justice?</li> </ul>	<p>May be additional costs to Exchequer related to development of local authority airports in respect of Credit Approvals, Objective 1 funding or RDA funding e.g. in respect of Public Service Obligations. See also next column.</p> <p>To the extent that policies encourage growth, there will be increased revenues in respect of e.g. Air Passenger Duty, taxation (company and personal), VAT on airport/airline retailing, and any other economic instruments that may be introduced.</p> <p>Sectors of the economy that are likely to be drivers of future growth, such as financial services and high tech manufacturing, rely heavily on air services; to that extent, failure to provide additional capacity would have an adverse effect on economic growth in the UK.</p> <p>There are wider economic benefits: to industries such as tourism; attracting more inward investment and trade; and lower business costs from reduced delays at airports. Regional airports can have significant benefits for local and regional economies, promoting economic regeneration, encouraging inward investment and contributing to regional competitiveness.</p> <p>Some administrative costs will arise, for example from the programme of work to resolve environmental problems at Heathrow. There may also be new administrative costs if any expanding airports are designated by the Secretary of State for noise control purposes.</p> <p>Increased capacity and higher passenger numbers, will lead to some additional pressures on Customs and Immigration, and possibly also on planning, health and policing services.</p>	<p>Airport operators/developers are expected to bear costs of airside development and in respect of road/rail connections to airports, to the extent they benefit. But if there are wider benefits there may be costs to Exchequer relating to contribution to road/rail infrastructure; and offsetting revenues (see previous column).</p>

Integrated Policy Appraisal		Qualitative assessment	Quantitative measure(s)
<b>E C O N O M I C</b>	<b>Consumers</b>	<ul style="list-style-type: none"> <li>● Will the policy or project affect the cost, quality or availability of commercially available or publicly-provided goods or services?</li> </ul>	Yes. Encouraging growth should provide greater opportunities for air travel and make air services more competitive, and therefore improve quality and reduce fares. An alternative policy of restraint would have opposite effects. Growth will also provide benefits for the users and consumers of air freight services.
		<ul style="list-style-type: none"> <li>● Will it result in a change in the choice available to consumers, or the availability of information to enable them to exercise choice?</li> </ul>	Yes. Policies in the White Paper should facilitate more choice for air travellers. There is likely to be an increase in point to point services from regional airports, less need to travel to airports in other regions, and a wider choice of routes and destinations. An expanded aviation sector is also likely to bring consumer benefits generally in terms of wider access to markets and goods. Alternative policies to constrain capacity would have meant air travellers having to make journeys by alternative, less convenient modes.
	<b>Business</b>	<ul style="list-style-type: none"> <li>● Will it introduce a new technology or process that will make existing goods redundant over time?</li> </ul>	Yes. Environmental measures should incentivise development of new technology in the aerospace sector, speeding up the removal of noisier and more polluting aircraft. Allowing growth will also give airlines the income streams necessary to finance new aircraft purchases.
		<ul style="list-style-type: none"> <li>● Will the policy or project impose or relieve a cost or burden on business, charities or the voluntary sector?</li> </ul>	Increased capacity should have beneficial effects for business, providing opportunities for trade and encouraging foreign direct investment. Will increase jobs and lead to investment in infrastructure and public transport. Cheaper fares, easier access to markets and increased range of destinations should make business more competitive. But greater number of passengers may lead to road congestion/pressure on public transport system, and overheating of local economies – pressure on housing/land take/wages. Environmental measures will impose some costs on airlines, but these will fall mainly on those operating more polluting aircraft. Improved air services will have some benefits for aid agencies working overseas.
			<p>The quantified net economic benefits of additional airport capacity are mainly in terms of passenger benefits, allowing more people to fly and giving all passengers a greater choice of timings and routeings.</p> <p>The net economic benefits of a first new runway at Stansted around 2011 on an up to date basis is £9 billion (present value, reflecting latest HMT ‘Green Book’ changes). On the same basis Heathrow is £5.5bn. For a package with Stansted as the first runway and either Heathrow or (in 2024) a Gatwick wide-spaced runway as the second, the net present value would be around £17bn. A new runway at Birmingham Airport opening in 2016 has a benefit:cost ratio of some 4:1, and a new runway at Edinburgh opening in 2023 has a benefit:cost ration of some 3:1.</p> <p>Estimating the reduction in fare premiums enabled by additional capacity suggests that the fare premium per passenger for a return journey in 2030 at Stansted with no increase in capacity would be £122. With one extra runway, it would be £85, giving a reduction of £37.</p> <p>Meeting unconstrained demand could increase total aviation related employment by up to 150,000 by 2030 – providing jobs with airlines, handling agents, airport operators, retail, catering, hotels, control agencies, engineering, tourism, inward investment, and ‘cluster’ industries, etc. With one new runway at Stansted, additional jobs (direct and indirect) might be 56,000 by 2030, at Heathrow with a new runway, 117,000, and with a new wide-spaced runway at Gatwick, 64,000.</p>

	Integrated Policy Appraisal	Qualitative assessment	Quantitative measure(s)	
S O C I A L	Public accounts and public service	<ul style="list-style-type: none"> <li>● Will it result in a change in the investment in people, equipment, infrastructure, or other asset?</li> <li>● Will the policy or proposal enhance or harm health or safety?</li> <li>● Will it affect health related behaviour such as diet, physical activity, alcohol, tobacco and drug consumption?</li> <li>● Will it affect access to NHS services?</li> </ul>	<p>Policy support for airport development should encourage airport operators to bring forward new infrastructure as the need arises.</p> <p>Airports require a high percentage of skilled labour, which could cause shortages elsewhere. But airport development (both construction and operation) also provide jobs for unskilled workers, encouraging training, with benefits in terms of addressing inequalities.</p> <p>Flying is a very safe mode of travel, with an accident rate over the last decade averaging one fatality for every forty-four million passengers carried by UK passenger airlines. Aviation safety will continue to be of prime importance, and growth in the volume of air travel should not significantly affect accident rates. Alternative policies of restraint would be likely to lead to some travellers having to use less safe modes. For Cliffe, studies indicated that mitigation measures would need to have included an on-going, aggressive and comprehensive bird management programme to prevent bird-strike.</p> <p>Air travel has a number of positive health and social benefits which are difficult to quantify – for example, taking holidays abroad, relaxation, experiencing other cultures, visiting friends and family. Growth in air travel and development at airports would bring increased opportunities for employment, with its attendant benefits to health, especially in areas of deprivation and low employment.</p> <p>Conversely, growth in air travel means more noise and air pollution, more surface traffic and potential impacts on amenity and social capital. All these aspects have been taken into account in assessing the airport options, and have been quantified where possible. (See also entry for air quality, below).</p>	<p>Countervailing pressures, particularly in areas of high employment, are on house prices and wages, and on public transport and infrastructure.</p> <p>For air quality, see specific entry below.</p>



Integrated Policy Appraisal	Qualitative assessment	Quantitative measure(s)
<b>S</b> <b>O</b> <b>C</b> <b>I</b> <b>A</b> <b>L</b>  <b>Crime</b>	<p>Risks of spread of infectious diseases from international travellers and impacts on local A&amp;E services are not thought to be significant.</p> <p>Government's forecast of underlying demand for leisure trips is stronger for foreign residents than for UK travellers. In principle, therefore, if capacity is provided to meet that demand, over time the higher numbers of foreign tourists could place additional demands on health services while visitors are in the UK.</p> <ul style="list-style-type: none"> <li>● Will it affect the use of the work environment to maintain or improve health, or the ability of people to return to work from illness (whether the illness is work-related or not)?</li> <li>● Will the policy or project affect the rate of violent and non-violent crimes?</li> <li>● Will it divert people away from or prevent crime?</li> <li>● Will it affect people's fears about being a victim of crime?</li> <li>● Will it create a new offence or create an opportunity for crime e.g. through fraud?</li> <li>● Does the policy create new investigative powers that could increase the risk of violence against public sector workers?</li> </ul>	<p>No.</p> <p>No.</p> <p>Not significantly. Growth in air travel will mean a greater number of flights and passengers, which in turn could see an increase in the (relatively small) number of incidents of 'air rage'. Higher numbers of people flying potentially offers more scope for petty crime at airports and smuggling of goods. Security continues to be strict but terrorism remains a constant threat.</p> <p>Increased urbanisation might lead to higher levels of crime. To the extent that areas of high unemployment may benefit from jobs and regeneration arising from airport development, this may tend to divert some people away from crime.</p> <p>No.</p> <p>No.</p> <p>No</p> <p>In the year to March 2003 there were 648 reported disruptive passenger incidents on UK airlines, of which 35 were judged to be serious. A significant increase in the number of passengers flying might lead to an increase in incidents. The Aviation (Offences) Act 2003 has increased police powers of arrest for disruptive behaviour and drunkenness on board aircraft and increased the penalty for endangering the safety of an aircraft. This may act as a deterrent.</p>

Integrated Policy Appraisal		Qualitative assessment	Quantitative measure(s)	
<b>S</b> <b>O</b> <b>C</b> <b>I</b> <b>A</b> <b>L</b>	<b>Social capital, community and education</b>	<ul style="list-style-type: none"> <li>● Will the policy or project affect the number of people involved in voluntary and community activities?</li> </ul>	<p>Possibly, at the margins. Many airports are already involved in a range of voluntary and community activities ; a stronger airports industry could provide more opportunities for airport-sponsored community projects.</p>	
		<ul style="list-style-type: none"> <li>● Will it affect people's access to information or social networks?</li> </ul>	<p>Well planned airport development and surface access links have the potential to improve social networks; conversely, communities can become severed by poorly designed infrastructure. This needs to be taken into account in the planning stages. More access to air services could facilitate social networks i.e. visits to distant friends and relatives (currently around 20 per cent of all air journeys). This is becoming more important as the UK becomes a more multicultural society.</p>	<p>To meet the employment needs of 1 new runway at Stansted, 18,000 dwellings may be required by 2015 (in excess of those included in current RPG). For Heathrow, the equivalent figure would be 30,000.</p>
		<ul style="list-style-type: none"> <li>● Will it affect the availability of affordable homes of suitable quality?</li> </ul>	<p>Depending on options chosen, may be some impact on cost/availability of local affordable housing.</p>	<p>In areas of high employment, incoming workers from other areas may put pressure on local housing stock, increase house prices and wages and lead to overheating of local economy. Offsetting factors include economic and social benefits of full employment. There may be opportunities for airport-sponsored affordable housing.</p>
		<ul style="list-style-type: none"> <li>● Will it affect the capacity for parents/guardians to provide a stable environment for their children?</li> </ul>	<p>No. See below for comment on children's health.</p>	<p>No robust direct evidence of noise impacts on physical health. Noise causes annoyance and may cause sleep disturbance, thus affecting the general quality of life. Annoyance responses to day and night noise may be correlated with negative affectivity (mental state) but the direction of causation is not fully established by research. DfT sponsored research is in progress on subjective responses to noise.</p>
		<ul style="list-style-type: none"> <li>● Will it affect the level of skills and education, in the workforce, among children, or otherwise?</li> </ul>	<p>There have been suggestions that aircraft noise may affect children's cognitive development, but no evidence so far of any pronounced or lasting effects – research is continuing at European level, with UK contributing.</p> <p>A number of airports already work in partnership with schools and local organisations. There is significant potential for airport development to bring positive benefits in terms of local employment and training opportunities, particularly in deprived areas.</p>	



Integrated Policy Appraisal		Qualitative assessment	Quantitative measure(s)
<b>S</b> <b>O</b> <b>C</b> <b>I</b> <b>A</b> <b>L</b>	<b>Social capital, community and education</b> <ul style="list-style-type: none"> <li>● Will it affect access to, and the range of, facilities for the arts, culture, sports and leisure pursuits?</li> </ul>	<p>Growth in air services should increase access to, and range of, facilities, for arts, culture etc. as result of easier access and low fares within the UK and abroad. But further development at airports could adversely affect the rural environment and people's enjoyment of it, particularly in the Stansted area. Noise impacts can also impair the enjoyment of outdoor events.</p>	<p>If Ministers approve options which will substantially increase capacity, large numbers of people will be able to fly at relatively low cost to many destinations and enjoy easy access to many arts, cultural and leisure facilities. And a large increase in inward tourism will help support UK arts and culture.</p>

	Integrated Policy Appraisal	Qualitative assessment	Quantitative measure(s)	
ENVIRONMENTAL	<b>Climate change</b>	<ul style="list-style-type: none"> <li>● Will the policy or project lead to a change in the emissions of any of the six greenhouse gases, for instance by consumption of fossil fuels?</li> </ul>	<p>Aviation growth will lead to increased consumption of aviation fuel and greater emissions of greenhouse gases, adversely affecting climate change. But accompanying policies to tackle environmental impacts, whether by regulatory or economic means, will help to mitigate this.</p>	<p>The SERAS and RAS appraisal frameworks provided for an assessment to be made of the impact of aviation on climate change. This involved an assessment of total CO<sub>2</sub> from additional flights calculated under a number of packages which offer different total amounts of capacity.</p>
	<b>Air quality</b>	<ul style="list-style-type: none"> <li>● Will it affect, or be affected by, vulnerability to the predicted effects of climate change e.g. flooding?</li> <li>● Will the policy or project lead to a change in the emissions of air pollutants?</li> <li>● Will it result in greater or fewer numbers of people being affected by existing levels of air pollution?</li> <li>● Will it have a bearing on areas of existing poor air quality?</li> </ul>	<p>The airport development options chosen are unlikely to be vulnerable to flooding, nor to increase the vulnerability of others.</p> <p>Policies to facilitate growth are likely to lead to significant expansion of activity and therefore potential increase in total emissions of air pollutants and in the number of people affected. But the impacts will depend very much on policies to tackle local air quality, and on technology advances.</p> <p>Any development is likely to be subject to mitigation measures and will need to comply with statutory limits. NO<sub>2</sub> and PM<sub>10</sub> were taken as the relevant pollutants, since they are subject to forthcoming mandatory EU limits.</p>	<p>The national cost of global warming from CO<sub>2</sub> from passenger aircraft in 2000 is estimated at £1.4 billion a year. This is estimated to increase to over £4 billion a year in 2030 assuming unconstrained demand. The introduction of economic instruments may lead to lower demand and have supply-side effects.</p> <p>The regional and SE airport studies undertook research into the impacts of various capacity scenarios on local air quality, providing information on which to gauge possible health impacts. The impacts were assessed against NAQS, which are set in relation to health impacts.</p> <p>In the case of the regional airports modelled, our initial screening indicated there could be potential exceedences of NO<sub>2</sub> at only Birmingham and Manchester airports, for 2030. Further work has been undertaken at Birmingham, which confirms that by 2020 there would be no exceedences and that it is highly unlikely beyond that date. For Manchester, the earlier modelling was undertaken on the assumption of higher passenger forecasts than the White Paper is now indicating and we do not believe exceedences are likely.</p>





Integrated Policy Appraisal		Qualitative assessment	Quantitative measure(s)	
E N V I R O N M E N T A L	<b>Land use, waste and water</b>	<ul style="list-style-type: none"> <li>● Will the policy or project consume a substantial volume of natural, non-renewable resources, including land?</li> <li>● Will it lead to a change in the volume of waste produced or to the way it is processed?</li> <li>● Will it affect the efficient use of energy or water?</li> <li>● Will it lead to an increase or decrease in water pollution?</li> <li>● Will it increase or decrease water abstraction or otherwise affect the flow, run-off or recharge of water?</li> </ul>	<p>Expansion outside existing airport boundaries is envisaged at only a few airports.</p> <p>Construction and use of new terminals/runways etc will inevitably lead to more waste and higher consumption of energy and water, except to the extent that this is addressed by mitigation measures.</p> <p>At Stansted and Heathrow there may be water resource problems which could be aggravated by persistently low seasonal rainfall. Supply and demand management techniques might address this problem. At Stansted, increased risk of flooding as a result of new development could be addressed by mitigation measures.</p>	
	<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>● Will the policy or project involve disturbance or relief of disturbance to habitats or species by change of land use, light or noise?</li> <li>● Will it lead to severance, fragmentation, isolation or change in size of habitats?</li> </ul>	<p>Impacts will vary according to location. It may be possible to provide alternative habitats.</p>	<p>The impacts of airport options on ecology were assessed in the air services studies. A new airport at Cliffe would have impacted on several national and international designated areas including a SPA and SSSI. Possible land purchase and habitat creation elsewhere was estimated to cost in the region of £200m.</p>



Integrated Policy Appraisal	Qualitative assessment	Quantitative measure(s)
<b>E N V I R O N M E N T A L</b>	<b>Noise</b> <ul style="list-style-type: none"> <li>● Will the policy or project lead to increase or decrease in exposure to noise of sensitive buildings such as schools and hospitals?</li> <li>● Will it lead to an increase or decrease in the number of people affected by existing noise?</li> <li>● Will it lead to a change in standards or use that would increase or decrease the noise generated by products?</li> </ul>	<p>The options have varying impacts on sensitive buildings. The number of people affected by noise varies from option to option, but will be likely to increase where there is a very major development; sensitive receptors have been identified in relation to each airport affected.</p> <p>Noise at source (e.g. aircraft engines) is subject to EU/ICAO rules. Policies in the White Paper will influence the terms and conditions under which airports operate in future. In particular the demanding noise limit imposed on Heathrow is likely to accelerate the development and uptake of quieter aircraft, leading to knock-on benefits at other airports.</p> <p>A new runway at Stansted could bring an additional 2,000 people within the 57dBA noise contour in 2015. At Heathrow, the limit imposed in the White Paper will ensure no net increase in the noise contour, but some 50,000 people would be newly affected by noise at the 57dBA <math>L_{eq}</math> level and above as a result of a new runway - with a similar number of people who are currently affected, ceasing to be within the area affected. At Gatwick, a wide-spaced runway would bring an additional 10,000 people within the 57dBA contour by 2015.</p> <p>In respect of schools and hospitals, we estimate a slight reduction in numbers exposed to noise at the 57dBA level and above in the year 2015 under the one runway options for Stansted and Heathrow.</p> <p>The proposed new runway at Birmingham could affect up to 103,000 people at 57dBA <math>L_{eq}</math> and above by 2030, compared to 34,000 in 1999. At Manchester, 43,400 people were within the 57dBA contour in 1999, and this could rise to around 70,000 people by 2030, depending on the level of growth at the airport.</p> <p>The numbers affected at other regional airports would be much lower but where they are significant the need for appropriate noise controls and mitigation measures is noted, for example in connection with growth at East Midlands Airport.</p> <p>Night noise restrictions at Heathrow, Gatwick and Stansted are a separate issue and will be the subject of consultation outside the White Paper process.</p>
	<b>Other</b> <ul style="list-style-type: none"> <li>● Will the policy or project have a significant impact that does not appear to be reflected in any of the categories above?</li> </ul>	<p>Impacts on settlements, including community structure, distinctiveness and employment, and levels of deprivation, were considered in the SE airport studies.</p>

## Distributional impacts

Will the policy or project impact unevenly in respect of any of the following?

*Description of differential impacts across groups (quantified where possible)*

<b>Deprivation and income groups:</b>	Policies to encourage growth are likely to make air travel relatively more affordable, accessible and socially inclusive. By contrast, policies not to expand capacity would price-off lower income travellers and 'favour' higher income groups. Airport development could help provide employment opportunities for low income groups and deprived areas.
<b>Age:</b>	No differential impacts envisaged.
<b>Gender:</b>	No differential impacts envisaged.
<b>Disability:</b>	If anything, disabled passengers may benefit proportionately more than able-bodied, to the extent that growth of regional airports may encourage more point to point air services locally, and less need to travel long distances by road/rail to larger airports or to inter-line. In the UK, airlines and airports have agreed to follow a Code of Practice on access to air travel for disabled people, which complements the European Voluntary Commitments. This Code will be voluntary in the first instance, but if it does not prove effective the Government is prepared to give it statutory force.
<b>Race:</b>	Some differential impacts are possible. For example, the Heathrow third runway option would impact more heavily on ethnic minority communities (e.g. in Ealing, Southall, Slough) compared with the Stansted options.
<b>Regions and localities:</b>	Potentially, all regions should share in economic benefits from increased capacity, where it occurs, allowing a wider range and frequency of services. Constraining growth in the SE would have damaged all regions, but especially the SE and those parts of the UK (especially Scotland and Northern Ireland and the far South West) which depend heavily on air services to the SE, both for point-to-point and interconnecting traffic. By 2030 throughput for non-interlining passengers through SE airports are around 2.4 times 2000 levels. Corresponding growth factor for regional airports is 3.33 times.
<b>Rural areas:</b>	Rural areas are likely to benefit less, proportionately, than urban areas because most airports are sited close to centres of population. Growth in the regions, and more point to point air services, may tend to benefit peripheral (mainly rural) regions. Environmental disbenefits (noise, emissions, land take, habitat, biodiversity and so forth) are covered elsewhere. Loss of rural tranquillity in some locations is inevitable. But there will be countervailing economic benefits e.g. new direct and indirect jobs, better transport links, inward investment, inbound tourism, cluster industries and so forth which could also benefit rural areas in airport hinterland.
<b>Small firms:</b>	Aviation relies on many small firms providing services, including catering, cleaning, engineering and many small shops and businesses serving airport populations. Small firms more generally will benefit alongside others from the lower cost of air fares and better access to markets. Small firms will also benefit from improved air freight services, especially express services.
<b>Other effects that vary across different groups:</b>	–

## Risk

Main risks probably associated with air traffic forecasts, in the sense that if demand proves to be significantly greater or smaller than anticipated, costs and benefits will vary accordingly. But, although the White Paper sets out the Government's preferred options for any future capacity enhancement and indicates priorities in the South East, it will be for airport operators/developers to establish the business case and decide when to bring forward planning applications, depending on actual demand/growth. So the risk is minimised, and will fall largely on the private sector.

**Photographic acknowledgements**

*Front cover photos numbered from left to right*

1, 3 & 6 – Mark Wagner/Aviation\_images.com

2 & 5 – Getty Images

4 – BAA Aviation Photo Library

*All maps:*

Crown Copyright, Ordnance Survey Mapping under licence number GD272671

*Photographs:*

p. 21 – BAA Aviation Photo Library

p. 22 – Mark Wagner/Aviation\_images.com

p. 24 – Mark Wagner/Aviation\_images.com

p. 29 – BAA Aviation Photo Library

p. 32 – Mark Wagner/Aviation\_images.com

p. 33 – Mark Wagner/Aviation\_images.com

p. 36 – BAA Aviation Photo Library

p. 41 – Mark Wagner/Aviation\_images.com

p. 46 – Mark Wagner/Aviation\_images.com

p. 47 – East Midlands Airport

p. 48 – Monarch Airlines

p. 49 – BAA Aviation Photo Library

p. 51 – Mark Wagner/Aviation\_images.com

p. 52 – Mark Wagner/Aviation\_images.com

p. 59 – Eurostar

p. 60 – BAA Aviation Photo Library

p. 72 – Loganair

p. 81 – Flybe

p. 84 – Mark Wagner/Aviation\_images.com

p. 95 – BAA Aviation Photo Library

p. 96 – Birmingham International Airport

p. 97 – Mark Wagner/Aviation\_images.com

p. 109 – Mark Wagner/Aviation\_images.com

p. 114 – Mark Wagner/Aviation\_images.com

p. 116 – Mark Wagner/Aviation\_images.com

p. 120 – Mark Wagner/Aviation\_images.com

p. 121 – BAA plc

p. 125 (top) – BAA Aviation Photo Library

p. 125 (bottom) – Mark Wagner/Aviation\_images.com

p. 128 – Mark Wagner/Aviation\_images.com

p. 131 – Mark Wagner/Aviation\_images.com

p. 144 – Mark Wagner/Aviation\_images.com

p. 145 – Mark Wagner/Aviation\_images.com